REMARKS

The application has been amended. In particular, claim 1 has been amended to clarify that the substrate exhibits a maximum value of dynamic viscoelasticity tan δ of 0.7 to 1.8 at the recited temperature range. Support for this amendment can be found in the application at page 5, line 6. Accordingly, this Amendment is not considered new matter within the meaning of 35 U.S.C. §132. In view of the above amendments and the following remarks, reconsideration is respectfully requested.

Claims 1-4 have been rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over European Patent Publication EP 0 798 355 A2 to Nagamoto et al. (hereinafter "Nagamoto"). The Examiner contends in the Office Action that Nagamoto discloses "a pressure-sensitive adhesive sheet comprising a pressure-sensitive adhesive layer and a photocurable resin substrate composed of the urethane acrylate oligomer and polyene thiol resin in Applicants' preferred embodiment as noted on page six of the specification." The Examiner then contends that the properties of the substrate as defined in claims 1 and 2 are considered inherent or obvious based on these teachings of Nagamoto, and further contends that the methods of use of claims 3 and 4 are rendered nominal because such uses are clearly within the skill of the art for which the article is intended. These rejections are respectfully traversed.

Applicants note that the cited European application to Nagamoto is owned by the same Assignee as the present application, namely, Lintec Corporation.

Nagamoto discloses a base material for adhesive tape having a radiation cured material which is prepared by curing a mixture of urethane acrylate oligomer and reactive dilute monomer. Such a base material has a breaking elongation of more than 10%, preferably more than 100%. Applicants respectfully note, however, that Nagamoto fails to

teach the specific maximum value of dynamic viscoelasticity as claimed in the present invention.

In particular, as noted above, the claims of the present application clearly relate to an adhesive sheet having a specific substrate which exhibits a maximum value of dynamic viscoelasticity tan δ of 0.7 to 1.8 at a temperature ranging from -5 to 80° C. (hereinafter simply referred to as "tan δ value"). The use of such a specific substrate including such a tan δ value as in the present invention provides a surface protective pressure sensitive adhesive sheet which can precisely follow the irregularities of an adherend surface, thereby absorbing any irregular height differences. Accordingly, processing of the back of the adherend, such as grinding of a semi-conductor chip, will result in a smooth grinding, without any interference from the irregular surface of the adherend surface. As such, surfaces having relatively large protrusions such as semi-conductor wafers having circuits thereon, can have effective smooth grinding without any irregularities from the height differences of the electrode elements, even when such height differences are on the order of 30 microns or more.

Nagamoto fails in any way to teach the tan δ value as claimed in the present application. In fact, the Examiner specifically recognizes such deficient teachings in the rejection, but contends that the specific properties exhibited by the substrate with respect to the dynamic viscoelasticity and Young's modulus would be inherent from the disclosure of Nagamoto, arguing that the same compositions are used to prepare the substrate. Applicants submit that Nagamoto does not teach or even suggest the inventive substrate, and is completely silent on how to obtain the specific substrate having the recited properties.

As a basis for demonstrating the differences between the present application and the cited Nagamoto reference, Applicants submit herewith a Declaration under 37 C.F.R. §1.132 by the first named inventor of the present application, Mr. Kondo, as well as the first

named inventor of the cited European reference, Mr. Nagamoto. The attached Declaration compares base sheets prepared according to Examples 1, 2 and 3 of the present application with a base sheet prepared according to Example 1 of the cited Nagamoto reference. The comparison of these base sheets demonstrates that the base sheet prepared according to Example 1 of Nagamoto exhibits a maximum value of tan δ of 0.69, which is below the claimed range of 0.7 to 1.8 of the present invention. On the other hand, the base sheets prepared according to Examples 1, 2, and 3 of the present application demonstrate a maximum value of dynamic viscoelasticity tan δ of 0.78, 0.85, 1.18, respectively, each of which clearly falls within the claimed range of the present invention. Moreover, the Declaration further demonstrates back grinding aptitude for each of these base sheets, with the base sheets of the present invention each exhibiting good back grinding aptitude, while the base sheet prepared according to Example 1 of Nagamoto demonstrates a dimpled back grinding aptitude, representing an unsatisfactory result.

As is clearly evident from the results demonstrated in the attached Declaration, the pressure sensitive adhesive sheet of the present invention including a base sheet having a specific maximum value of dynamic viscoelasticity achieves improved and unexpected results as compared to pressure sensitive adhesive sheets of the prior art, which incorporate base sheets having different dynamic viscoelasticities. Such results clearly demonstrate the novelty and nonobviousness of the present invention in view of the cited art.

The present specification includes combinations of various oligomers and monomers, which achieve the specific properties realized through the present invention, as demonstrated at page 9, lines 19-22 of the application. In addition, the examples clearly demonstrate working embodiments of the present invention, such that the skilled artisan can reproduce the inventive substrate having the claimed properties. To the contrary, Nagamoto fails in any way to teach or even remotely suggest the inventive substrate, and is completely

silent on the properties achieved with respect to dynamic viscoelasticity and the unexpected results such properties impart to the base sheet.

Accordingly, in view of the above remarks, it is evident that Nagamoto fails to teach or suggest the present invention with the specific claimed characteristics. As such, the rejections based on the teachings of Nagamoto are improper. Withdrawal of the rejection based on Nagamoto is, therefore, deemed appropriate.

With respect to the Examiner's contention that the methods of use of claims 3 and 4 are clearly within the skill of the art, it is noted that such methods relate to the use of the pressure sensitive adhesive as claimed in claim 1. As noted above, the prior art fails in any way to teach or suggest a pressure sensitive adhesive including a substrate sheet having the specific dynamic viscoelasticity as claimed. Accordingly, the rejection of claims 3 and 4 is improper in the same manner as the rejection of claims 1 and 2.

In view of the above amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Withdrawal of the rejection, reconsideration and favorable action are therefore respectfully solicited.

Should the Examiner have any questions regarding any of this information or wish to discuss this matter in further detail, the Examiner is invited to contact Applicants' undersigned representative by telephone at 412-471-8815.

Respectfully submitted,

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MARKED UP VERSION OF THE CLAIMS

1. (Amended) A pressure sensitive adhesive sheet comprising a substrate and, superimposed thereon, a pressure sensitive adhesive layer, said substrate exhibiting a maximum value of dynamic viscoelasticity tan δ of [at least 0.5] 0.7 to 1.8 at a temperature ranging from -5 to 80° C.